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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/549,767	04/03/2006	Johan Pieter de Wet	10690/014	1220
27879 7590 04/10/2009 INDIANAPOLIS OFFICE: 27879 BRINKS HOFER GILSON & LIONE ONE INDIANA SQUARE, SUITE 1600 INDIANAPOLIS, IN 46204-2033				
EXAMINER NGUYEN, TAM M				
ART UNIT		PAPER NUMBER		
1797				
MAIL DATE		DELIVERY MODE		
04/10/2009		PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary**Application No.**

10/549,767

Applicant(s)

PIETER DE WET ET AL.

Examiner

TAM M. NGUYEN

Art Unit

1797

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 03 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 16-30 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 16-30 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SF/ICE)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(c), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(c) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on March 23, 2009 has been entered.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(c), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 17-30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Becker et al. (DE 199 11910 A1) in view of De Wet et al. (WO 02/31085 A2).

Since the Becker et al (DE 19911910 A1) is equivalent to the Republic of South Africa application No. 20001295 which is in English, for convenience the examiner will use the application No. 20001295 disclosure as the disclosure of the DE 19911910 A1 patent.

The Becker reference discloses a process for removing oxygenates from a hydrocarbon stream having at least 6 carbon atoms (e.g., 1-octenes) by contacting the hydrocarbon stream with a solvent comprising water and alcohol (e.g., methanol) in a liquid-liquid extracting column to produce an extracting stream which is sent to a solvent recovery column. A hydrocarbon product stream and a solvent stream are recovered from the solvent recovery column. The solvent stream is then recycled back to the extraction distillation column. The Becker reference also discloses that the hydrocarbon stream is from a Fischer-Tropsch process. It is noted that Becker does not specifically disclose that the hydrocarbon stream comprises paraffins. However, the hydrocarbon stream of the Becker reference is from a Fischer-Tropsch process. It would be expected that the hydrocarbon stream of the Becker reference comprises at least a small amount of paraffins. (See entire patent)

The Becker reference does not specifically teach the hydrocarbon stream containing a range of hydrocarbons in the C₈ to C₁₆ range or C₁₀ to C₁₃ range, and does not specifically disclose the amount of oxygenates in the hydrocarbon stream.

The De Wet reference teaches a process for separating oxygenates from a hydrocarbon stream by utilizing a solvent extracting system. The De Wet reference teaches a hydrocarbon stream of a C₁₀-C₁₃ cut containing olefins, paraffins and oxygenates. The reference also teaches that the solvent comprises alcohol and water wherein water is less than 18% of the solvent.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the Becker reference by utilizing a hydrocarbon stream comprising any amount of oxygenate including the claimed amount with the expectation that a hydrocarbon feed comprising the claimed amount of oxygenate would be successfully treated in the process of the Becker reference.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the Becker reference by utilizing a hydrocarbon stream containing hydrocarbon within the claimed ranges because one of skill in the art would utilize any hydrocarbon stream having at least C₆ including a hydrocarbon stream having carbon atoms within the claimed ranges with the expectation that any hydrocarbon stream having carbon atoms greater than six including the claimed feed would be successfully treated in the process of the Becker reference.

Alternatively, one of skill in the art would use any hydrocarbon cut including hydrocarbon that is taught by the De Wet reference.

Becker does not specifically teach the amount of water content in the solvent.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to have modified the process of the Becker reference by utilizing a solvent containing the amount of water as suggested by the De Wet reference because such amount is effective in the extracting process.

Since the modified process of the Becker reference is essentially the claimed as the claimed process, it would be expected that the output streams of the Becker process would have composition similar to the composition as claimed.

Response to Arguments

The argument that ethanol is the only alcohol that is used in the process with reference to Figure 3 is not persuasive. Becker teaches that the alcohol is a light alcohol including methanol as claimed. It is not necessary that the reference has to teach all the disclosed alcohols in all examples or in all the figures.

The argument that solvent recovery column 9 is an azeotropic distillation and there is no teaching or suggestion in Becker that the solvent recovery step could be replaced with a temperature distillation in which there is no azeotrope is not persuasive. Becker teaches that the solvent recovery step is proved successful both for the azeotropic distillation as well as for **liquid/liquid extraction**. There is no replacement as argued. See Becker: paragraphs 4-5 of page 2; last paragraph of page 6.

The argument that one of skill in the art would be expected that hydrocarbons would report to the bottoms of the temperature distillation with the oxygenates, and therefore be lost,

due to its expected azeotrope with oxygenates is not persuasive. As discussed above, Becker teaches a liquid/liquid extraction as claimed.

The argument that extractive distillation effect or a different technology approach-azeotropic distillation is not suggested by Becker or De Wet is not persuasive. The reason or motivation to modify the reference may often suggest what the inventor has done, but for a different purpose or to solve a different problem. It is not necessary that the prior art suggest the combination to achieve the same advantage or result discovered by applicant. In *re Linter*, 458 F.2d 1013, 173 USPQ 560 (CCPA 1972); In *re Dillon*, 919 F.2d 688, 16 USPQ2d 1897 (Fed. Cir. 1990), cert. denied, 500 U.S. 904 (1991).

The argument that utilizing a feed having chain lengths from 8 to 16 carbon atoms and oxygen would result in a higher water to hydrocarbon ratio, as a result of which the decanter 16 will not be effective in achieving phase separation between the methanol/water and hydrocarbon is not persuasive. There is no evidence that a feed having 8-16 carbon atoms would not be effectively treated in the process of Becker. Becker does not limit the types of hydrocarbon feedstock. In addition, Becker teaches that the feedstock is from a Fischer-Tropsch as disclosed in the present specification. One of skill in the art would use any hydrocarbon feed including a feed having carbon atoms as claimed. Again, it is reminded Becker teaches a liquid/liquid separation as claimed. Even if there is a problem with a decanter 16 (which is absolutely not true), it is within the level of one of skill in the art to operate/adjust the decanter so it is operated effectively.

It is reminded that the examiner relied upon De Wet to teach that the claimed amount of water is known in the art.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TAM M. NGUYEN whose telephone number is (571)272-1452. The examiner can normally be reached on Monday through Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on (571) 272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Tam M. Nguyen
Primary Examiner
Art Unit 1797

TN
/Tam M. Nguyen/
Primary Examiner, Art Unit 1797